Work Order ID 61185

August 11, 2010 7:43:04 AM

Item ID: D350-636-011 **Accept** **Setup** **Start**

Revision ID: **Stop**

Item Name: Skidtube LH

Start Date: 8/11/10 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 8/20/10 **Req'd Qty:** 1.00 **Customer:**

Reference:

Run **Start** **Stop**

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	**Revision Nbr**								
D2750	Rev F								
100		0.00							
DC	DOCUMENT CONTROL								
Document Control	**Memo**	0.00							
	Photocopy blue file and type labels per PPP D350-636-011 CHG 005								

8 10/08/30

for BG 10-8-27

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110	Skidtubes	0.00							
Skidtubes		0.00							
Skidtubes									

Memo

1- Pick D2600-3 Bent

2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D2750

3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr.

4- Locate DT8330 off of blade fitting bolt holes and drill pilot holes for blade fitting

5- Drill fwd step holes using DT9616. Ensure proper positioning.

6- Drill pilot holes as per Dwg D2750 sheet 4 (D2750-1 details).Drill using drill Jig DT8150 & DT8863A for first side only DT8863B for second side (detail B) ***ONLY DRILL ONE SIDE OF FWD SADDLE HOLES USING DT8150***

7- Clecko DT8863B on second side of tube and drill pilot holes for detail B. ***SECOND SIDE***

8- Clecko DT9642 and drill fwd saddle holes on second side, ensure proper positionning.

9-Open up holes for Detail B to 0.375" (4 holes per side)and blade fitting location holes to 0.500" (total of 4 holes per side) as per dwg D2750 .Open up holes for ground handling and detail C to 0.500" (8 holes per side)

10-Drill pilot holes for wearplates as per Dwg D2750 using DT8108 open to

AWM-10-08-14

DP 10-8-16

Dart Aerospace Ltd

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Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

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H:\fFORMS\Quality Assurance\approved QA\NCRWO RevE

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QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
	0.297".								
	11-Open up holes of Detail A to 0.297" (total of 2 holes per side)				10-8-16				
	12-Weld D2744 Cap as per Dwg D2750 and QSI 004.Fill grooves in bend left from bending as per QSI 004								
	A/R Aluminum Rod batch:□ M114877	BE 10/08/16							
	13-Grind welds flush as per Dwg D2750	BE 10/08/17							
120 QC Quality Control	QC10- Inspect visual per QSI004- ground welds	0.00							
		S 10/08/17							
	Memo	0.00							
130 QC Quality Control	QC5- Inspect part completeness to step on W/O	0.00							
		S 10/08/17							
	Memo	0.00							

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Reference:

Run Start

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Chemical Conversion Coat per QSI005 4.1	0.00				10-8-18			
HandFinish	Memo	0.00							
Hand Finishing									
150	QC3- Inspect Part Finish	0.00						BE 10-8-18	
QC	Memo	0.00							
Quality Control									

Dart Aerospace Ltd

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Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

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QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____ **Stop**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160		0.00							
	Skidtubes								
Skidtubes		0.00							
Skidtubes									

Memo

1-Open up holes of Detail C and ground handling to 0.625" (total of 8 holes per side)
as per dwg D2750.

2-Open up holes of Detail B to 0.750" (total of 4 holes per side)
as per dwg D2750.

3- Open float hole to 0.500" (4 per side)

4-Chamfer holes of Detail B, C, ground handling and float holes per dwg D2750
(welding instructions on sheet 8)

5-Deburr and blow out all chips from inside of tube

6- Prepare tube for welding, remove alodine as required.

7-Bond web D2739 in place as per QSI 015
A/R □□□ Sikaflex-291 batch: H115114□□
exp. date: 11-1-30

8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D2750 & QSI004
(welding instructions on sheet 8)
A/R□□□ Aluminum Rod batch: M14877 BG 10/08/19

9- At section AJ-AJ drill out x-bolt spacer to 0.404" BG 10/08/19

10-Grind welds flush as per Dwg D2750 DP 10-8-23

DP 10-8-18

Dart Aerospace Ltd

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Run Start **Stop**

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
	11-Spot face ground handling holes section (total of 4 places per side) as per dwg D2750								
	12-Deburr holes								
170 QC Quality Control	QC10- Inspect visual per QSI004- ground welds	0.00							
	Memo	0.00							
180 QC Quality Control	QC5- Inspect part completeness to step on W/O	0.00							
	Memo	0.00							

Dart Aerospace Ltd

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Run Start

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	Pressure Wash per QSI005 4.3	0.00							
HandFinish	**Memo**	0.00							
Hand Finishing	Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.			①		BL 10-8-24.			
200	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
Powdercoat	M115291 **Memo**	0.00				1	Ø		
Powder Coating	START TIME: 1:00pm OVEN TEMPERATURE: 320°F FINISH TIME: 1:30pm								
210	QC3- Inspect Part Finish	0.00							
QC	**Memo**	0.00							
Quality Control	Inspect for foreign object per QSI 024								

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220 HandFinish Hand Finishing	HandFinishing	0.00				ml	10	08	26 (1)
	Memo 1- Install inserts as per Dwg D2750	0.00							
230 HandFinish Hand Finishing	HandFinishing	0.00				ml	10	08	26 (1)
	Memo 1-Inspect for Foreign Objects	0.00							

~~2-Spray inside of tube with "LPS-3" batch:~~ N/A

3-Install blade fitting D3488-041, wearshoes and ground handling hardware as per dwg D2750
SIKA FLEX 241
BATCH: 115114
EXP DATE: 11/01

4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube
A/R 55-o'ring lube batch: 114189

5-Coat all exposed fasteners with "LPS Procyon" batch: 114596

Dart Aerospace Ltd

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240	QC5- Inspect part completeness to step on W/O	0.00							
QC	Memo	0.00							
Quality Control									
250	Pick Kit	0.00							
Packaging	Memo	0.00							
Packaging									
260	QC4- 100% Inspect kits for completeness	0.00							
QC	Memo	0.00							
Quality Control	******ensure antiseize is on AN8C21A bolts*******								

B61185

Dart Aerospace Ltd

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270	Packaging	0.00							
Packaging									
Packaging	**Memo**	0.00							
Packaging	Package as per PPP D350-636-011								
	NEW-H								
280	QC21- Final Inspection - Work Order Release	0.00							
QC	**Memo**	0.00							
Quality Control									

10/08/31

CZ 10/8/31

Dart Aerospace Ltd

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Picklist Print

August 11, 2010 7:43:03 AM

Work Order ID: 61185

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/11/10 **Required Date:** 8/20/10

Start Qty: 1.00 **Required Qty:** 1.00

Comments:
IPP Rev:I□02.09.25□Rearranged procedure steps□KJ□
IPP Rev:J 06-03-23 As per Rev D JLM
IPP Rev:K 06-07.13 As per dsi9343 EC
IPP Rev:L 07-07-28 Added SS Wearplates(Rev E) JLM Verified By:EC
IPP Rev:M 08-04-22 update steps 4, 13 DD verified by:EC
IPP Rev:N 08-09-23 revF as per dwg DD verified by:ec
IPP Rev:O 09-02-06 apply antiseize on AN8C21A bolts as per PAR09-010
DD verified by:EC IPP Rev:P 10.06.22
revise seq110 DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2594-3 O-Ring, 205 Skidtube		Manufactured	No			230	Each	379.0000	8	8			
				Location		**Loc Qty**		**Loc Code**					
				FP		379							
					55546	19							
					58191	12							
					59358	348							
D2744 Cap		Manufactured	No			110	Each	35.0000	1	1			
				Location		**Loc Qty**		**Loc Code**					
				LG		35							
					59198	35							
D2600-3-BENT Extrusion Bent		Manufactured	No			110	Each	16.0000	1	1			
				Location		**Loc Qty**		**Loc Code**					
				LG		16							
					59410	16							

mt 10-08-26

BE 10/08/10

AWM 10-08-14 *

Dart Aerospace Ltd

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Work Order ID: 61185

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/11/10 **Required Date:** 8/20/10

Start Qty: 1.00 **Required Qty:** 1.00

D2743	Manufactured	No	160	Each	299.0000	8	8	
Crossbolt Spacer								

Location	Loc Qty	Loc Code
LG	299	
50281	10	
57953	2	
59111	287	

8 BE 10-8-19

D2739	Manufactured	No	160	Each	0.0000	1	1	
350 I Beam								

B61256 (1) DD 10-8-18

D3490-3	Manufactured	No	160	Each	54.0000	4	4	
Cross Bolt Spacer								

Location	Loc Qty	Loc Code
LG	54	
59229	14	
60294	40	

4 BE 10-8-19

D3490-1	Manufactured	No	160	Each	19.0000	4	4	
Cross Bolt Spacer								

Location	Loc Qty	Loc Code
LG	19	
59424	19	

B61217 x4 BE 10-8-19

ALS4-1032-225	Purchased	No	220	Each	5,945.000	38	38	
Insert								

Location	Loc Qty	Loc Code
PK011	5945	
110768	5945	

MM 10-08-26

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Work Order ID: 61185

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/11/10 **Required Date:** 8/20/10

Start Qty: 1.00 **Required Qty:** 1.00

D3492-041	Manufactured	No	230	Each	93.0000	8	8	
Plug Assembly								

Location	Loc Qty	Loc Code
FP013	93	
59114	24	
59420	69	

mf 10·08·26

D3793-3	Manufactured	No	230	Each	13.0000	1	1	
Wearshoe								

Location	Loc Qty	Loc Code
FP18	12	
59631	12	
FP19	1	
57947	1	

mf 10-08-26

AN8C35A	Purchased	No	230	Each	53.0000	1	1	
BOLT								

Location	Loc Qty	Loc Code
FP	1	
110847	1	
ST346	52	
114442	27	
115188	25	

mf 10·08·26

D3793-1	Manufactured	No	230	Each	15.0000	1	1	
Wearshoe								

Location	Loc Qty	Loc Code
FP18	15	
59151	2	
59630	13	

mf 10·08·26

Dart Aerospace Ltd

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August 11, 2010 7:43:03 AM

Work Order ID: 61185

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/11/10 **Required Date:** 8/20/10

Start Qty: 1.00 **Required Qty:** 1.00

D3488-041	Manufactured	No	230	Each	18.0000	1	1	
Blade Fitting Assembly, LH								

Location	Loc Qty	Loc Code
FP	11	
53915	11	
FP007	7	
56052	7	

mt 10-08-26

D3794-3	Manufactured	No	230	Each	24.0000	1	1	
Gasket								

Location	Loc Qty	Loc Code
FP10	12	
60826	12	
FP18	12	
56066	11	
59153	1	

mt 10-08-26

AN6C44A	Purchased	No	230	Each	177.0000	4	4	
BOLT								

Location	Loc Qty	Loc Code
FG	2	
103964	2	
ST344	175	
111649	2	
114653	1	
114784	47	
114941	75	
115030	50	

mt 10-08-26

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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August 11, 2010 7:43:03 AM

Work Order ID: 61185

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/11/10 **Required Date:** 8/20/10

Start Qty: 1.00 **Required Qty:** 1.00

MS21083C8 NUT	Purchased	No	230	Each	56.0000	1	1	

Location	Loc Qty	Loc Code
ST303	56	
113845	7	
114934	49	

MM 10-08-26

D3536-25 Gasket	Manufactured	No	230	Each	29.0000	1	1	

Location	Loc Qty	Loc Code
FP12	29	
58820	5	
59625	24	

MM 10-08-26

D3631-1 Washer	Manufactured	No	230	Each	571.0000	8	8	

Location	Loc Qty	Loc Code
ST072	297	
60755	297	
ST076	274	
52693	206	
54388	68	

MM 10-08-26

D3791-1 Wearplate	Manufactured	No	230	Each	20.0000	1	1	

Location	Loc Qty	Loc Code
FP17	20	
58573	11	
59626	9	

MM 10-08-26

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

August 11, 2010 7:43:03 AM

Work Order ID: 61185

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/11/10 **Required Date:** 8/20/10

Start Qty: 1.00 **Required Qty:** 1.00

AN960C10L	NAS1149C0332 R	Purchased	No	230	Each	29.0000	38	38	
washer									

M 115000

Location	Loc Qty	Loc Code
ST245	29	
107534	29	

mt 10-08-26

D2745		Manufactured	No	230	Each	169.0000	8	8	
Bushing									

Location	Loc Qty	Loc Code
ST023	169	
52311	5	
59112	164	

mt 10-08-26

AN3C5A		Purchased	No	230	Each	1,464.000	34	34	
Bolt									

Location	Loc Qty	Loc Code
ST350	1454	
114330	11	
115015	743	
115108	300	
115316	300	
115371	100	
ST351	10	
113121	10	

mt 10-08-26

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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August 11, 2010 7:43:03 AM

Work Order ID: 61185

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/11/10 **Required Date:** 8/20/10

Start Qty: 1.00 **Required Qty:** 1.00

D3537-1	Manufactured	No	230	Each	55.0000	3	3	
Wearpad								

Location	Loc Qty	Loc Code
FP	1	
55465	1	
FP17	54	
57713	3	
59593	3	
60192	48	

13# 60491

MI 10.08.26

AN960C816L	Purchased	No	230	Each	21.0000	1	1	
WASHER								

Location	Loc Qty	Loc Code
ST348	21	
110584	18	
111424	3	

MI 10.08.26

D3492-043	Manufactured	No	230	Each	51.0000	8	8	
Plug Assembly								

Location	Loc Qty	Loc Code
FP	2	
54682	2	
FP013	49	
59117	1	
59190	4	
59421	14	
60712	30	

B# 61207

MI 10.08.26

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Picklist Print

August 11, 2010 7:43:03 AM

Work Order ID: 61185

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/11/10 **Required Date:** 8/20/10

Start Qty: 1.00 **Required Qty:** 1.00

AN3C6A BOLT	Purchased	No		230	Each	425.0000	4	4	

Location	Loc Qty	Loc Code
ST351	425	
111982	425	

MM 10-08-26

NAS1611-013 O-RING	Purchased	No		230	Each	67.0000	8	8	

Location	Loc Qty	Loc Code
FP	67	
114451	51	
114496	16	

MM 10-08-26

D3535-25 Wearshoe	Manufactured	No		230	Each	24.0000	1	1	

Location	Loc Qty	Loc Code
FP18	24	
59623	24	

MM 10-08-26

D3794-1 Gasket	Manufactured	No		230	Each	19.0000	1	1	

Location	Loc Qty	Loc Code
FP010	19	
57942	18	
59627	1	

MM 10-08-26

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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August 11, 2010 7:43:04 AM

Work Order ID: 61185

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/11/10 **Required Date:** 8/20/10

Start Qty: 1.00 **Required Qty:** 1.00

MS21043-6	Purchased	No	230	Each	726.0000	4	4	
NUT								

Location	Loc Qty	Loc Code
ST301	726	
112314	726	

MM 10-08-26

D3493-1	Manufactured	No	260	Each	48.0000	2	2	10/8/2608
Washer								

Location	Loc Qty	Loc Code
ST065	48	
59127	18	
60873	30	

2

MS21083C8	Purchased	No	260	Each	56.0000	1	2	10/8/2608
NUT								

Location	Loc Qty	Loc Code
ST303	56	
113845	7	
114934	49	

2

AN8C21A	Purchased	No	260	Each	57.0000	2	2	10/8/2608
BOLT								

Location	Loc Qty	Loc Code
ST345	57	
113558	17	
114653	40	

2

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Picklist Print

August 11, 2010 7:43:04 AM

Work Order ID: 61185

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/11/10 **Required Date:** 8/20/10

Start Qty: 1.00 **Required Qty:** 1.00

AN960C816L	Purchased	No	260	Each	21.0000	1	2	
WASHER								

Location	Loc Qty	Loc Code
ST348	21	
110584	18	
111424	3	

D3672-1	Manufactured	No	230	Each	1,011.000	4	4	
Phenolic Washer								

Location	Loc Qty	Loc Code
ST077	993	
51674	5	
52505	988	
ST117	18	
34470	18	

D2741	Manufactured	No	260	Each	21.0000	1	1	
Blade, 350 Skidtube								

Location	Loc Qty	Loc Code
ST466	21	
55905	1	
57949	20	

D3532-1	Manufactured	No	260	Each	31.0000	2	2	
Spacer								

Location	Loc Qty	Loc Code
ST068	31	
59426	9	
60510	22	

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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August 11, 2010 7:43:04 AM

Work Order ID: 61185

Parent Item: D350-636-011

Parent Item Name: Skidtube LH

Start Date: 8/11/10 **Required Date:** 8/20/10

Start Qty: 1.00 **Required Qty:** 1.00

D3672-13	Purchased	No	260	Each	842.0000	2	2	10/8/26 SP
Phenolic Washer								

Location	Loc Qty	Loc Code	
ST077	842		
54363	842		2

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D2750-041	350 SKIDTUBE ASSEMBLY, LH
	X			D2750-042	350 SKIDTUBE ASSEMBLY, RH
		X		D2750-043	350 SKIDTUBE ASSEMBLY, LH
			X	D2750-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D2750-1	SKIDTUBE WELDMENT, LH
	1			D2750-2	SKIDTUBE WELDMENT, RH
		1		D2750-3	SKIDTUBE WELDMENT, LH
			1	D2750-4	SKIDTUBE WELDMENT, RH
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
1	1	1	1	D3535-25	WEARSHOE
1	1	1	1	D3536-25	GASKET
3	3	3	3	D3537-1	WEARPAD
8	8	8	8	D3631-1	WASHER
1	1	1	1	D3791-1	WEARPLATE
1	1	1	1	D3793-1	WEARSHOE
1	1	1	1	D3793-3	WEARSHOE
1	1	1	1	D3794-1	GASKET
1	1	1	1	D3794-3	GASKET
38	38	38	38	ALS4-1032-225	INSERT (OR ALS7-1032-225, AKS4-1032-225, AELS-1032-225)
34	34	34	34	AN3C5A	BOLT
4	4	4	4	AN3C6A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
38	38	38	38	AN960C10L	WASHER
1	1	1	1	AN960C816L	WASHER
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

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NO. 61185
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6 07.22 MA

GENERAL NOTES:

1) MATERIAL: MAKE D2750-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
2) FINISH:
   ACID ETCH, ALONDE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
   POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
   BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: N/A
6) IDENTIFICATION: N/A
7) WEIGHT: D2750-041/-042/-043/-044 = 26.5 LBS
8) WELD PER DART QSI 004
9) INSTALL ALS4-1032-225 INSERTS AFTER FINISH AS INDICATED. DRILL 'F' SIZE HOLES (Ø0.297) FOR WEARSHOE INSERTS
10) FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
    MINIMUM YIELD TENSILE STRENGTH = 35 KSI
    MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
11) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
12) SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL (F)
13) SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

REV.	DESCRIPTION	BY	DATE
F	INCORPORATE DSI 9413; QTY (3) D3537-1 WAS QTY (5) (ZN C8-1); D3791-1/-3 REPLACES D3535-13/-35 (ZN C8-1); D3794-1/-3 REPLACES D3536-13/-35 (ZN B8-1); ADD D3791-1 (ZN C8-1); WEARSHOE HOLES UNDER FWD/AFT SADDLE REMOVED (8 PL). WEARSHOE HARDWARE QTY UPDATED (ZN B6-1); D3488-041/-042 HARDWARE UPDATED (ZN C1-8, 9, 10, 11); ADD NOTE 12 AND 13 (ZN A6-1); REASON: REF. NCR 08-043	PH	08.07.16
E	CHANGE TO STAINLESS STEEL WEARPLATES; ADD RUBBER GASKETS; CHANGE INSERTS; ADD D3631-1; REMOVE QTY (38) NAS1515H3L; REMOVE QTY (10) NAS1515H8L; REMOVE D2741, QTY (2) AN960C816; REMOVE QTY (2) MS21083C8	CB	07.05.17
D	ADD HOLES AND SPACERS FOR APICAL FLOATS; INCORPORATE DEO 9133/9157	PH	06.01.05
C	ADD D2750-3/D2750-4; INCORPORATE D2738 AND D2740	CP	98.11.18
B	CHANGE MS24694-S293 TO AN8-16A	CP	98.09.01
A	NEW ISSUE	DS	98.04.16

DESIGN		**DART AEROSPACE USA, INC.** PORT HADLOCK, WA
DRAWN		
CHECKED		DRAWING NO. D2750 — REV. F — SHEET 1 OF 11
MFG. APPR.		
APPROVED		TITLE: 350 SKIDTUBE ASSEMBLY — SCALE: NTS
DE APPR.		
DATE	08.07.16	

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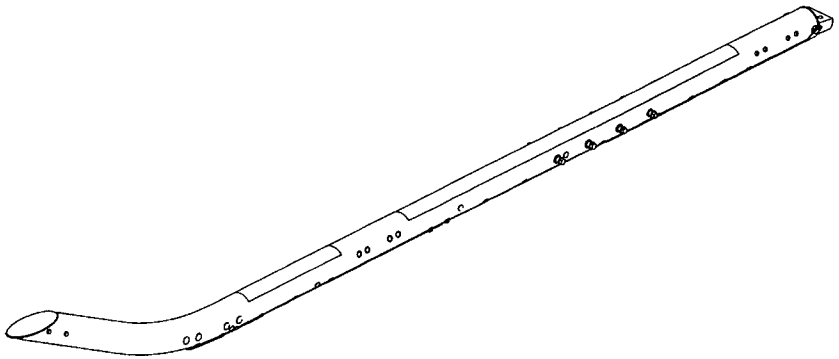
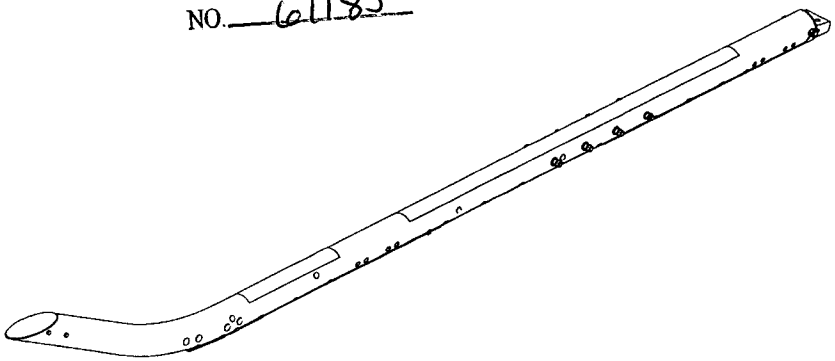


D2750-041 350 SKIDTUBE ASSEMBLY, LH



D2750-042 350 SKIDTUBE ASSEMBLY, RH

RELEASED

DESIGN	PCV	DART AEROSPACE USA, INC. PORT HADLOCK, WA
DRAWN		
CHECKED		DRAWING NO. D2750 — REV. F — SHEET 2 OF 11
MFG. APPR.		
APPROVED		TITLE 350 SKIDTUBE ASSEMBLY — SCALE NTS
DE APPR.		
DATE	08.07.16	

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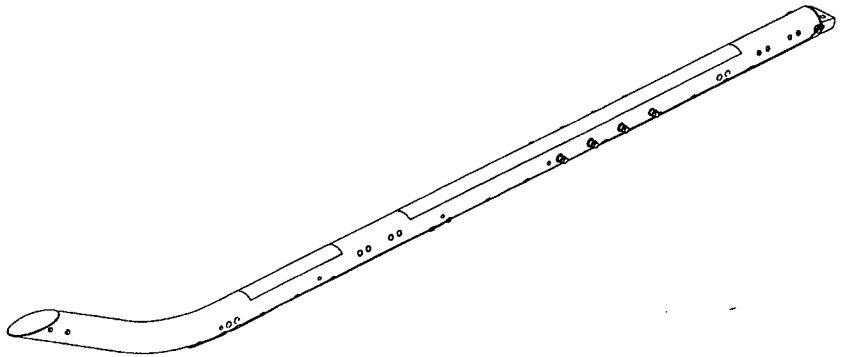
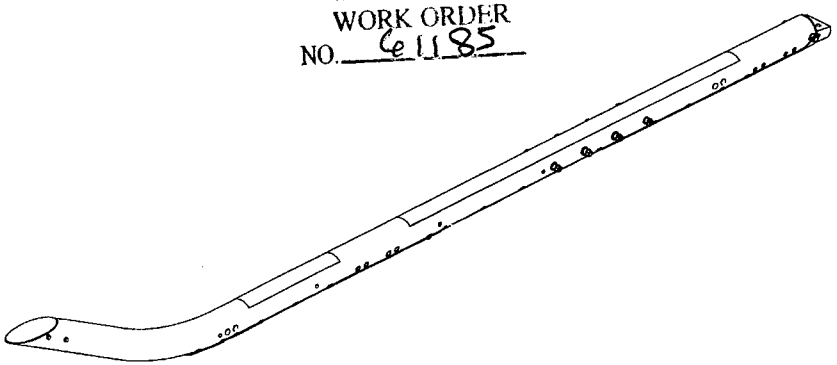


D2750-043 350 SKIDTUBE ASSEMBLY, LH



D2750-044 350 SKIDTUBE ASSEMBLY, RH

RELEASED 08-09-22

DESIGN	PD	**DART AEROSPACE USA, INC.** PORT HADLOCK, WA
DRAWN	PD	
CHECKED		DRAWING NO. D2750 — REV. F — SHEET 3 OF 11
MFG. APPR.		
APPROVED		TITLE: 350 SKIDTUBE ASSEMBLY — SCALE: NTS
DE APPR.		
DATE 08.07.16		

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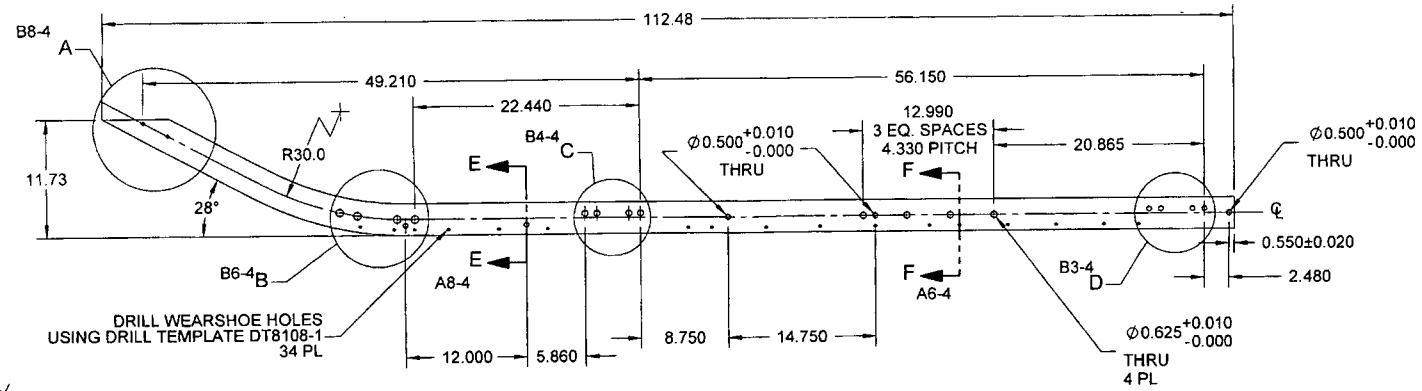

D2750-1 LH SKIDTUBE

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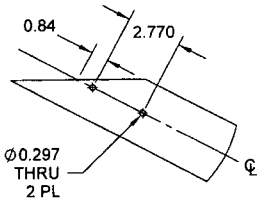
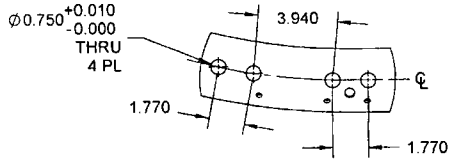
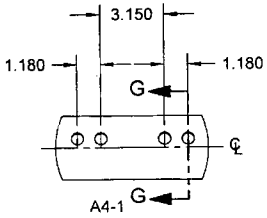


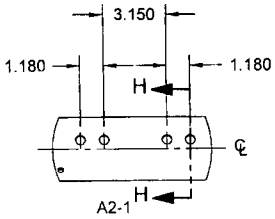
D7-4
DETAIL A
SCALE 2X



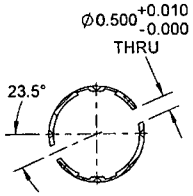
D7-4
DETAIL B
SCALE 2X



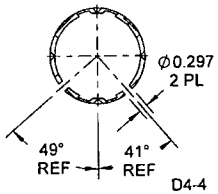
D5-4
DETAIL C
SCALE 2X



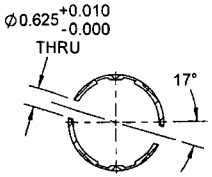
D3-4
DETAIL D
SCALE 2X



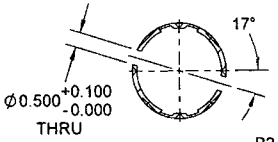
D6-4
SECTION E-E
SCALE 3X, 2 PL



D4-4
SECTION F-F
SCALE 3X, 17 PL



B4-4
SECTION G-G
SCALE 3X, 4 PL



B2-4
SECTION H-H
SCALE 3X, 4 PL

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DESIGN		**DART AEROSPACE USA, INC.** PORT HADLOCK, WA
DRAWN		
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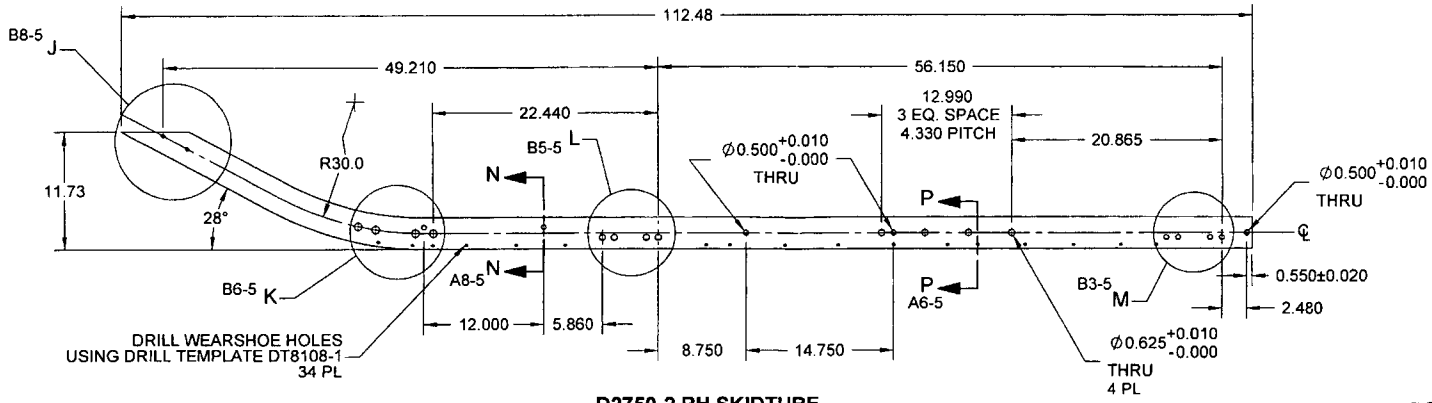

D2750-2 RH SKIDTUBE

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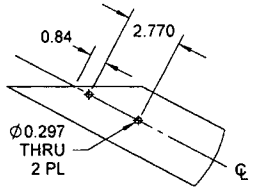

D8-5
DETAIL J
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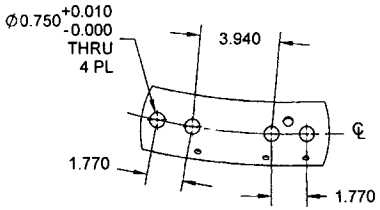

C7-5
DETAIL K
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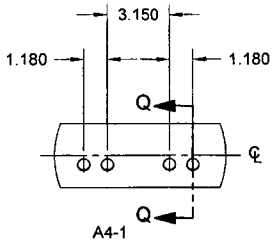

D6-5
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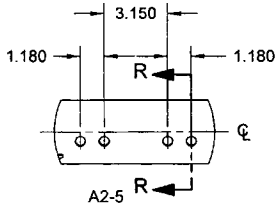
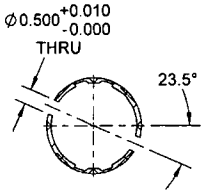
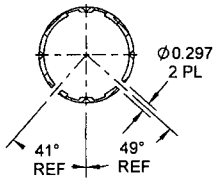


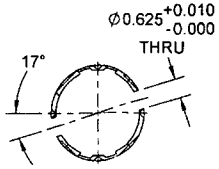
C3-5
DETAIL M
SCALE 2X



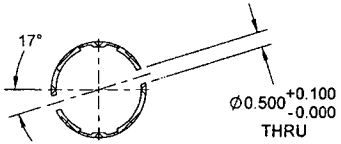
C6-5
SECTION N-N
SCALE 3X, 2 PL



C4-5
SECTION P-P
SCALE 3X, 17 PL



B5-5
SECTION Q-Q
SCALE 3X, 4 PL



B3-5
SECTION R-R
SCALE 3X, 4 PL

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DRAWN	PGI	
CHECKED		DRAWING NO. D2750 — REV. F — SHEET 5 OF 11
MFG. APPR.		
APPROVED		TITLE: 350 SKIDTUBE ASSEMBLY — SCALE: NTS
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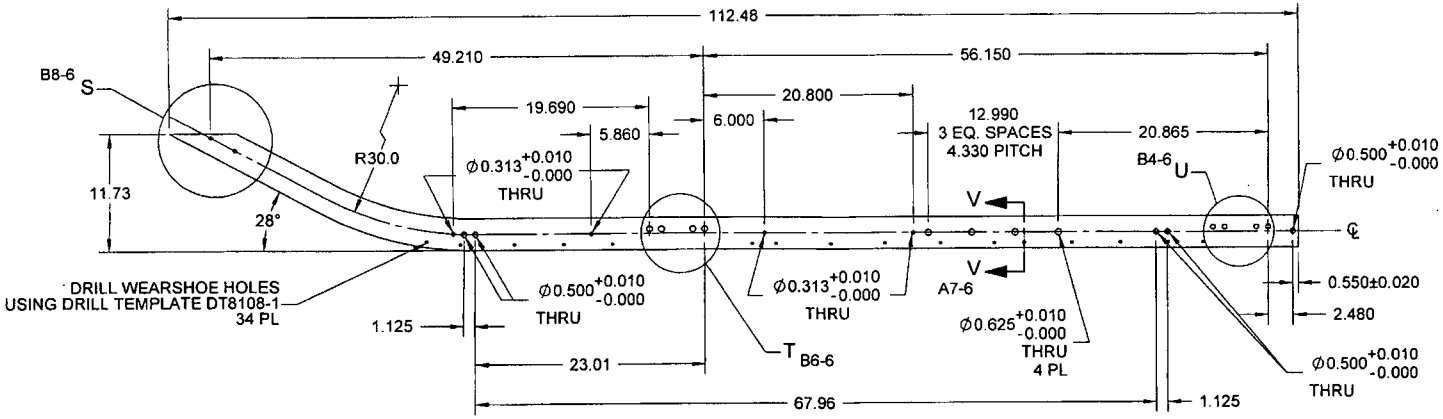
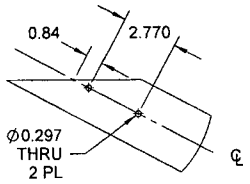


D2750-3 LH SKIDTUBE



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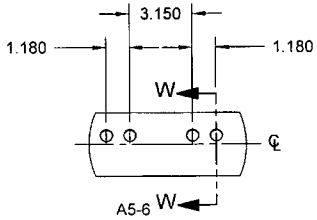

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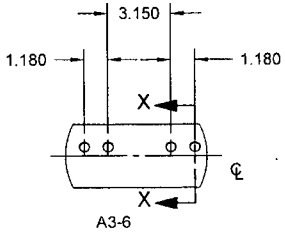

DETAIL U D3-6
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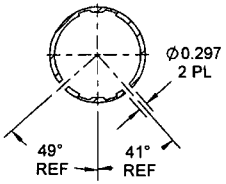
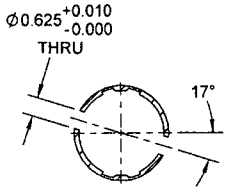
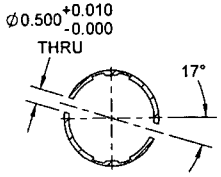


SECTION V-V C4-6
SCALE 3X, 17 PL



SECTION W-W B6-6
SCALE 3X, 4 PL



SECTION X-X B4-6
SCALE 3X, 4 PL

DESIGN		**DART AEROSPACE USA, INC.** PORT HADLOCK, WA
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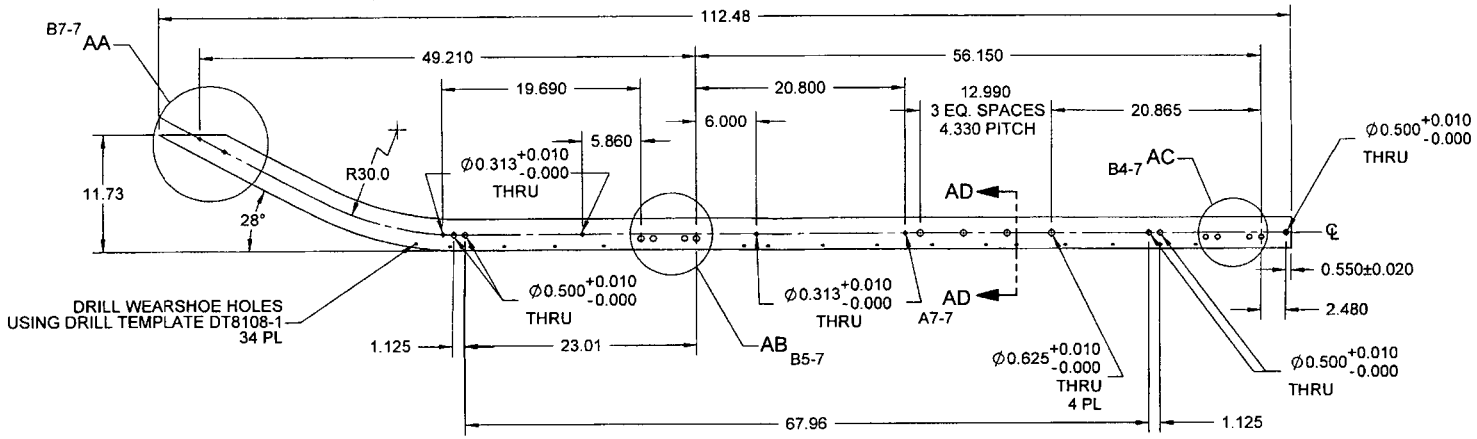
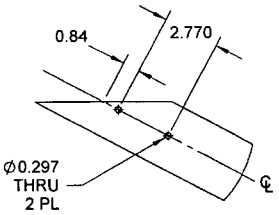


D2750-4 RH SKIDTUBE



DETAIL AA D7-7
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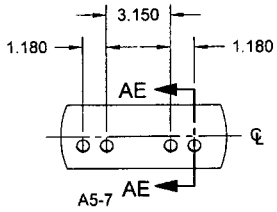

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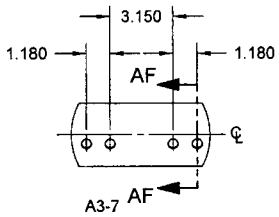

DETAIL AC D3-7
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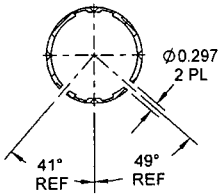
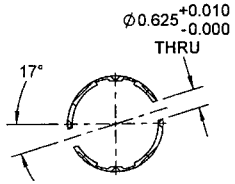
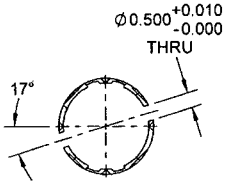


SECTION AD-AD D3-7
SCALE 3X, 17 PL



SECTION AE-AE B6-7
SCALE 3X, 4 PL



SECTION AF-AF B4-7
SCALE 3X, 4 PL

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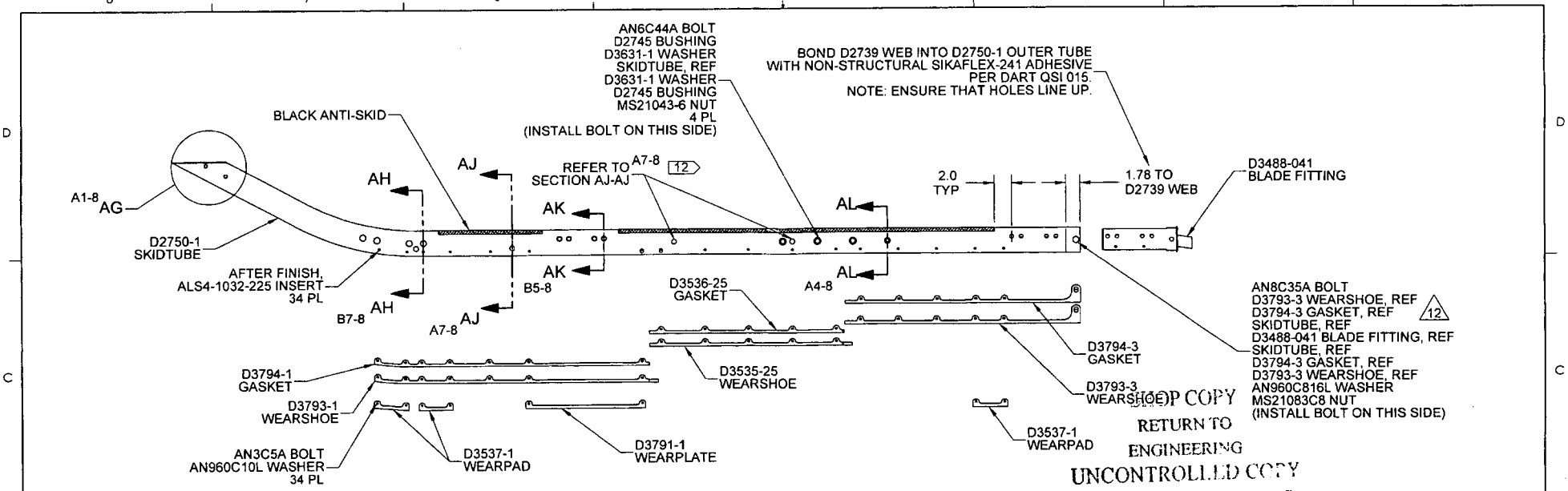

D2750-041 350 SKIDTUBE ASSEMBLY, LH

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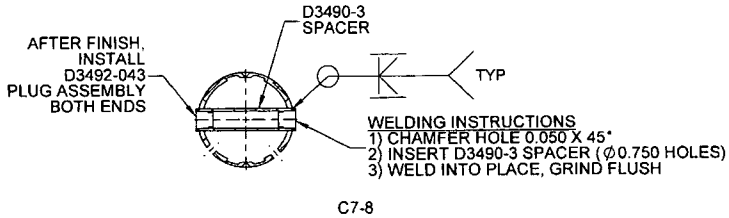

SECTION AH-AH
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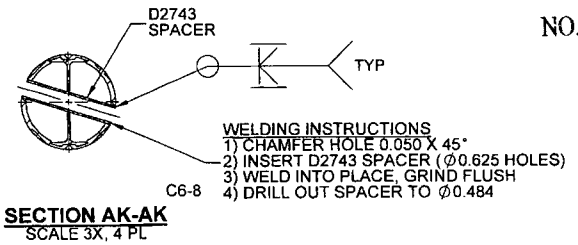

SECTION AK-AK
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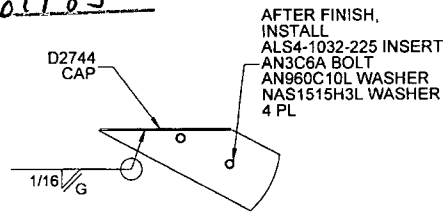

DETAIL AG
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D8-8

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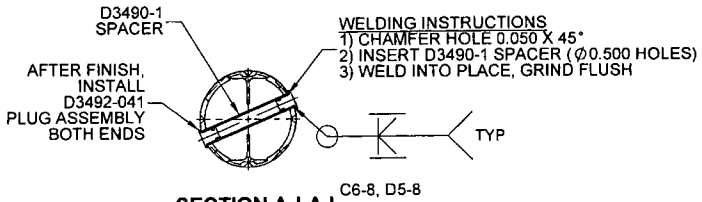

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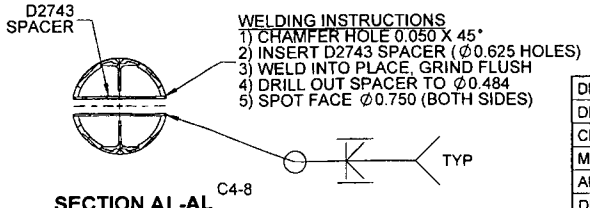

SECTION AL-AL
SCALE 3X, 4 PL
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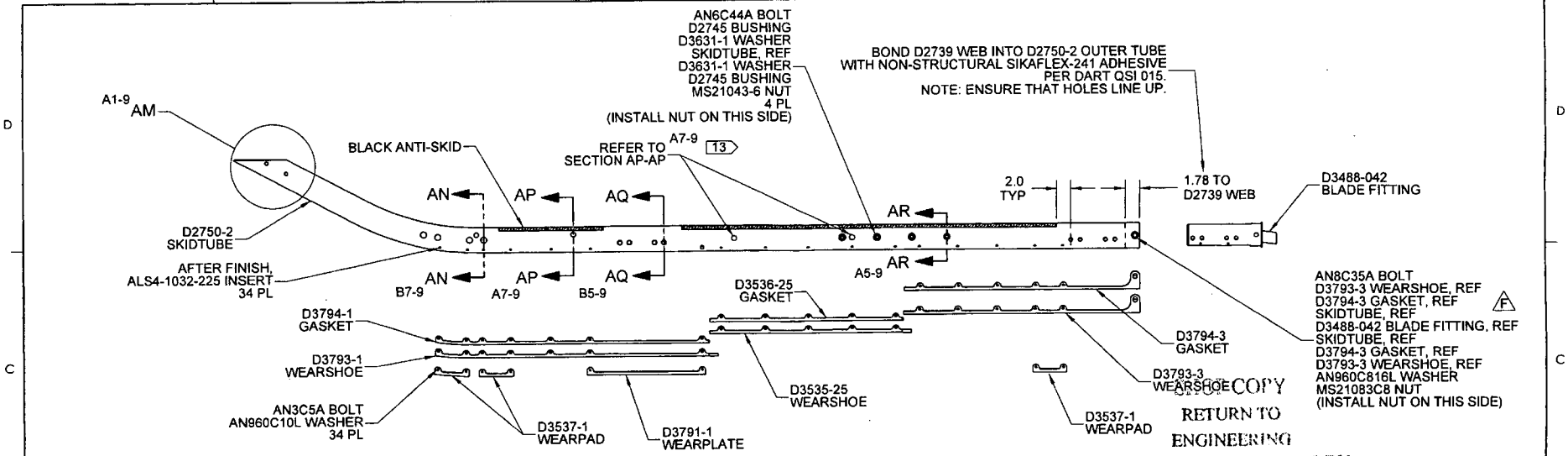

D2750-042 350 SKIDTUBE ASSEMBLY, RH

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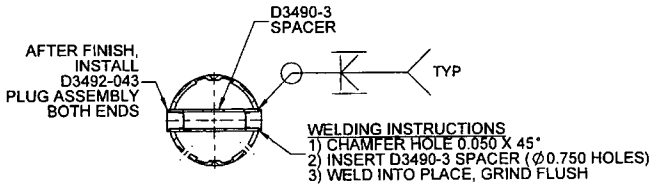
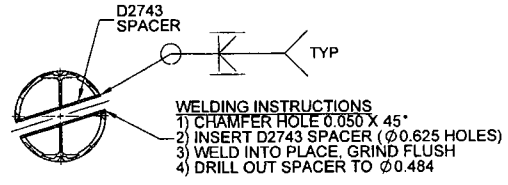


C7-9

SECTION AN-AN
SCALE 3X, 4 PL



C5-9

SECTION AQ-AQ
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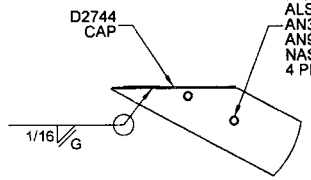
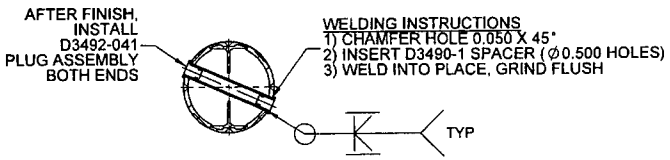


D8-9

DETAIL AM
SCALE 2X



C6-9, D5-9

SECTION AP-AP
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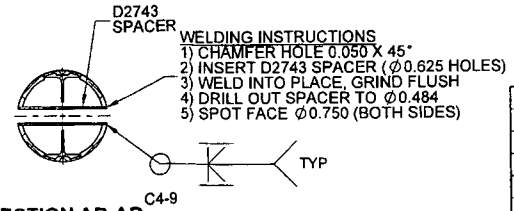

C4-9

SECTION AR-AR
SCALE 3X, 4 PL
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DESIGN		**DART AEROSPACE USA, INC.** PORT HADLOCK, WA
DRAWN		DRAWING NO. D2750 — REV. F — SHEET 9 OF 11
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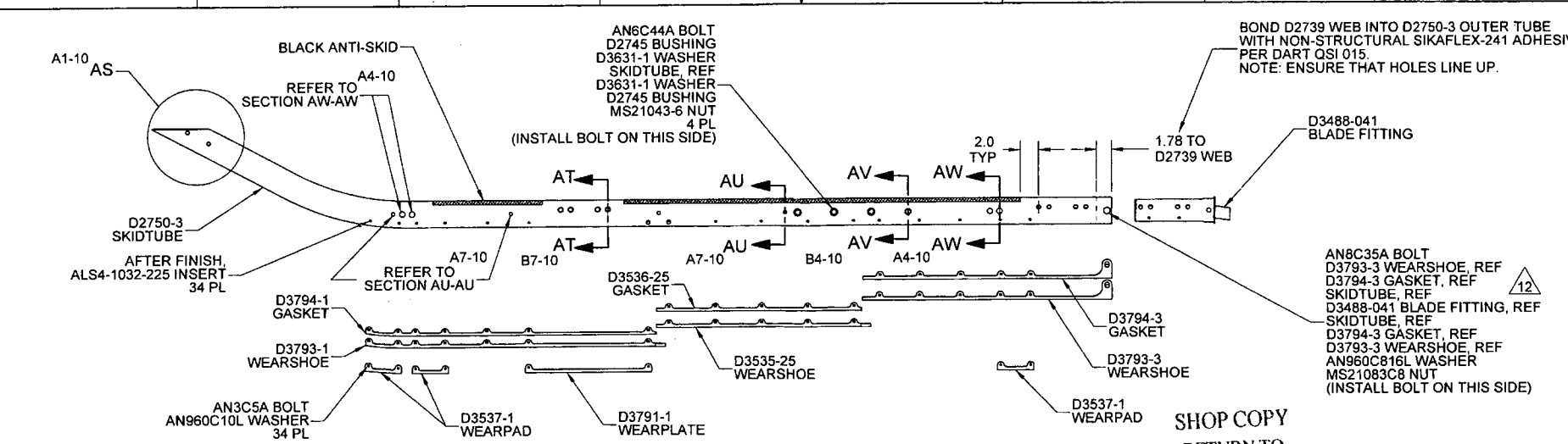

D2750-043 350 SKIDTUBE ASSEMBLY, LH

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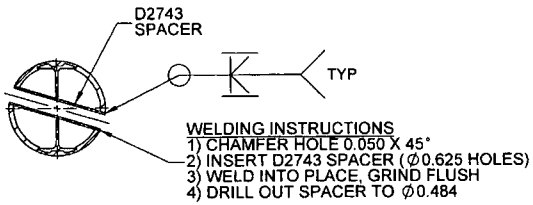
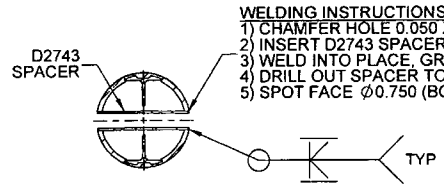


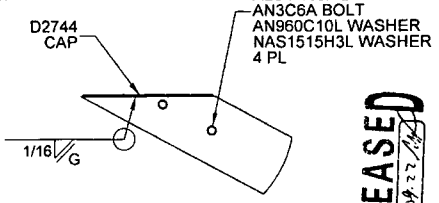
D6-10

SECTION AT-AT
SCALE 3X, 4 PL



D4-10

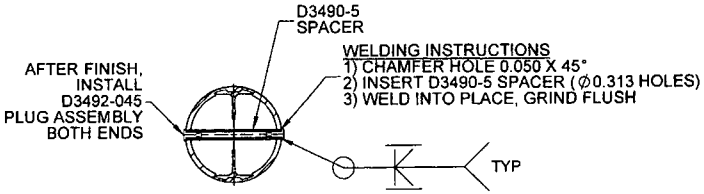
SECTION AV-AV
SCALE 3X, 4 PL
(HARDWARE REMOVED FOR CLARITY)



D8-10

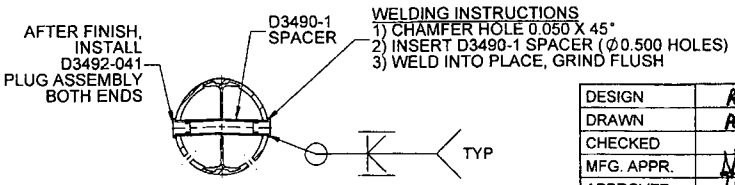
DETAIL AS
SCALE 2X

RELEASED



D5-10, D6-10

SECTION AU-AU
SCALE 3X, 4 PL



D4-10, D7-10

SECTION AW-AW
SCALE 3X, 4 PL

DESIGN		**DART AEROSPACE USA, INC.** PORT HADLOCK, WA
DRAWN		
CHECKED		DRAWING NO. D2750 — REV. F — SHEET 10 OF 11
MFG. APPR.		
APPROVED		TITLE: 350 SKIDTUBE ASSEMBLY — SCALE: NTS
DE APPR.		
DATE	08.07.16	

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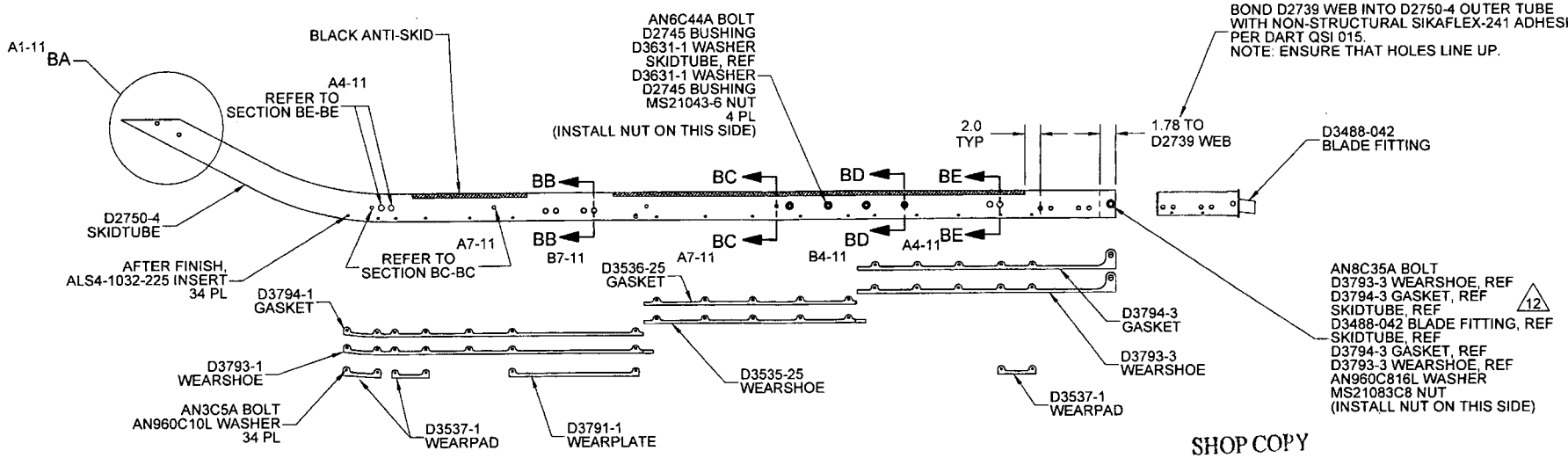

D2750-044 350 SKIDTUBE ASSEMBLY, RH

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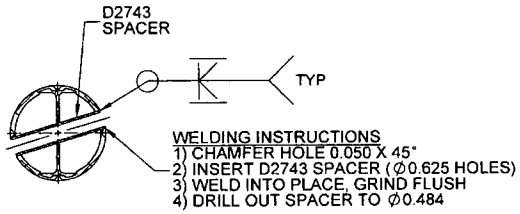
WITHOUT NOTICE
WORK ORDER
NO. 61185

RELEASED
08.09.22



SECTION BB-BB
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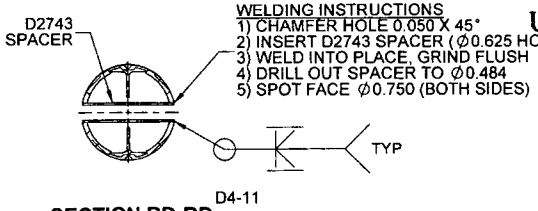

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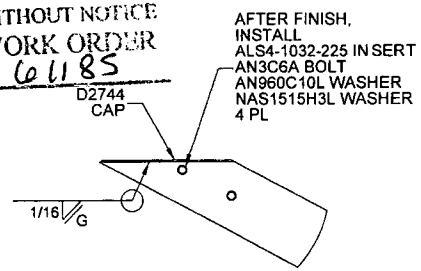
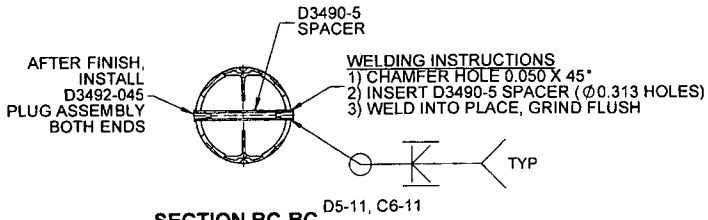


DETAIL BA D8-11
SCALE 2X



SECTION BC-BC
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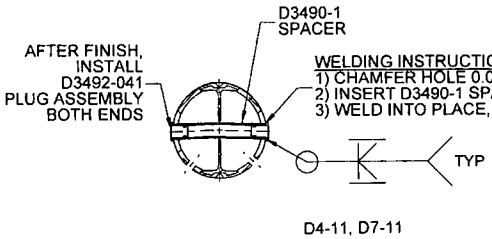

SECTION BE-BE
SCALE 3X, 4 PL

DESIGN		**DART AEROSPACE USA, INC.** PORT HADLOCK, WA
DRAWN		DRAWING NO. D2750 — REV. F — SHEET 11 OF 11
CHECKED		
MFG. APPR.		
APPROVED		TITLE: 350 SKIDTUBE ASSEMBLY — SCALE: NTS
DE APPR.		
DATE	08.07.16	

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NO. 236

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 60988
Part number: D350-636-012
Description: 350 skid tube
Welding Process: Tig[✓] Mig[ ]
Base materiel: Aluminium
Current: AC[✓] DC[ ]

TEST REQUIREMENTS AND RESULTS

Visual:	pass[✓]	fail[ ]
Penetration:	pass[✓]	fail[ ]

UNACCEPTABLE

Cracks:	pass[✓]	fail[ ]
Undercut:	pass[✓]	fail[ ]
Pin holes:	pass[✓]	fail[ ]
Overlap (cold lap)	pass[✓]	fail[ ]
Porosity (surface):	pass[✓]	fail[ ]
Coloration:	pass[✓]	fail[ ]

Qualifier [signature] **Date of Test Coupon** 10.08.12

Welder B Elliott **Date of Test Coupon** 10-08-12

The above named individual is qualified in accordance with AWS D17.1.2001 to weld